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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,727	04/08/2004	Philippe Jean Goix	076920-0851	3223

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EXAMINER	
WILLIAMS, DON J	

ART UNIT	PAPER NUMBER
2878	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/821,727	GOIX ET AL.	
	Examiner	Art Unit	
	Don Williams	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *8 August 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 4, 2007 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by Kochy et al (US2003/0017076).

As to claim 9, Kochy et al disclose (fig. 1) a pump (suitable pump) causing a fluid (fluid stream, 11) containing particles (12) which fluoresce at one or more wavelengths to flow in a capillary (15) past a source (14) of illumination whereby the particles (12) emit fluorescent light (21) at the one or more wavelengths; detector (17, 23, 24) repetitively detecting the emitted characteristic fluorescence (20, 21) of each of the

particles (12) multiple times during the transit of each of the particles (12) through the illumination source (14); and providing output signals (18, 26, 27) representative of the characteristic wavelength of each particles (12), (paragraphs, [0022], [0023], [0024]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kochy et al (US2003/0017076) in view of Dovichi et al (5,567,294).

As to claim 1, Kochy et al disclose (fig. 1) a capillary (15) providing a detection volume (fluid stream, 11); means (laser, 14) for projecting a light beam (16) through the capillary (15) to illuminate detection volume (11) in capillary (15); means (suitable pump) for causing a fluid (11) containing sample particles (12) which naturally fluoresce or are tagged to fluoresce and emit light (fluorescent light, 21) at one or more distinct wavelengths to flow along capillary (15) through detection volume (11); (paragraph [0023]) (filter, not shown) placed in front of the detectors (23, 24) to pass light at specific wavelengths which will permit detection of particles tagged with readily available materials which emit light at predetermined wavelengths which constitutes adapted to sequentially shift pass band between two or more wavelengths multiple times as each particle passes through the illuminated detection volume; and a detector (17, 23, 24) for

detecting the output light (output pulses, 18, 26, 27) at two or more wavelengths from filter and providing an output pulse (output pulses, 18, 26, 27) for each particle passing through the illuminated detection volume, (paragraphs [0022], [0023]). Kochy et al fail to explicitly disclose a tunable filter. Dovichi et al disclose filter (139) can be a tunable filter, (column 5, lines 44-46). It would have been obvious for one of ordinary skill in the art to modify Kochy et al in view of Dovichi et al to include a tunable filter in order to pass selective light pulses corresponding to wavelengths of each particle resulting in clear and precise detecting images of the particles which are displayed on a monitor for further evaluation.

As to claim 3, Kochy et al disclose a detector (17, 26, 27) for detecting light (20, 21) scattered by particles (12) as they travel through the detection volume (11), (fig. 1, paragraph [0024]).

As to claims 11-13, Kochy et al disclose (paragraph [0023]) (filter, not shown) placed in front of the detectors (23, 24) to pass light at specific wavelengths which will permit detection of particles tagged with readily available materials which emit light at predetermined wavelengths which constitutes adapted to shift pass band between four wavelengths repetitively or any number of times during the transit of each particle through the illuminated detection volume, (paragraphs [0022], [0024]).

Claims 5-8, 10, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kochy et al (US2003/0017076) in view of Pettit (6,210,973).

As to claim 5, Kochy et al disclose (pump) causing a fluid (fluid steam, 11) containing particles (12) to be analyzed to flow through an analyzing region in a capillary (capillary tube, 15); (laser, 14) applying excitation light (16) to the analyzing region to cause each particle (12) to emit light (20, 21) at its distinctive wavelengths as it passes through the analyzing region; receiving the emitted light (16, 20, 21) with (paragraph [0023]) (filter, not shown) placed in front of the detectors (23, 24) to pass light at specific wavelengths which will permit detection of particles tagged with readily available materials which emit light at predetermined wavelengths which constitutes adapted to sequentially shift pass band between two or more wavelengths multiple times as each particle passes through the analyzing region; and detecting the light (20, 21) at the two wavelengths passed by the filter with a single detector (17, 24, 23) to provide output signals (18, 27, 26) representative of the distinct wavelengths. Kochy et al fail to explicitly disclose a tunable optical filter. Pettit discloses an acousto-optic tunable filter (34), to permit desired wavelengths of light to pass while blocking out undesired wavelengths of light, (column 8, lines 13-18). It would have been obvious for one of ordinary skill in the art to modify Kochy et al in view of Pettit to include an acousto-optic tunable filter in order to allow sequentially shifting of pass band of fluorescence wavelengths which are detected and converted into electrical signals

wherein the outputs result in clear and precise images displayed on a monitor for further analysis.

As to claim 6, Kochy et al disclose the particles (12) are caused to flow at a rate such that the light (20, 21) emitted by a particle (12) is passed by the filter a number of times as the particle (12) transits through the analyzing region, (fig.1, paragraphs [0022], [0023]). Kochy et al fail to explicitly disclose a tunable filter. Pettit discloses an acousto-optic tunable filter (34) that permits desired wavelengths of light to pass while blocking out undesired wavelengths of light, (column 8, lines 13-18). It would have been obvious for one of ordinary skill in the art to modify Kochy et al in view of Pettit to include an acousto-optic tunable filter in order to allow the passing of desired tagged pulses of fluorescence wavelengths which are detected and converted into electrical signals wherein the pulse outputs result in clear and precise images displayed on a monitor for further analysis.

As to claim 7, Kochy et al disclose (fig. 1) a capillary (11) for receiving a sample fluid (fluid stream, 11) containing particles (12) to be analyzed and providing a predetermined region; a pump (suitable pump) for causing the sample fluid (11) to flow through the capillary (15); a light source (14) for projecting a light beam (16) through the capillary (15) to illuminate analyzing region along the capillary (15) whereby singulated particles (12) flow through the illuminated analyzing region and emit fluorescent light (21) at the one or more wavelengths; (paragraph [0023]) (filter, not shown) placed in front of the detectors (23, 24) to pass light at specific wavelengths which will permit detection of particles tagged with readily available materials which emit light at

predetermined wavelengths which constitutes adapted to sequentially shift pass band between two or more wavelengths multiple times as each particle passes through the illuminated analyzing region; and a detector (17, 23, 24) for receiving light (20, 21) at the two or more wavelengths passing by the filter and providing an output pulse (18, 26, 27) for each particle (12) passing through the illuminated analyzing volume; (paragraphs [0022], [0023], [0024]). Kochy et al fail to disclose a tunable optical filter and a processor. Pettit disclose an acousto-optic tunable filter (34) and a computer (50), (fig. 1, column 9, lines 5-16). It would have been obvious for one of ordinary skill in the art to modify Kochy et al in view of Pettit to include a tunable optical filter in order to permit desired wavelengths of light to pass while blocking undesired wavelengths of light resulting in clear images of the particles. It would have been obvious for one of ordinary skill in the art to modify Kochy et al in view of Pettit to include a computer having a processor that receives the output signals from the detector and determines the fluorescence output resulting in clear and precise images corresponding to the particles.

As to claim 8, Kochy et al disclose filters may be placed in front of detectors (17, 23, 24) to pass light at specific wavelengths such as 580nm and 675nm which will permit detection of particles tagged with readily available materials which emit light at predetermined wavelengths, (paragraph [0023]). Kochy et al fail to explicitly disclose tunable filter is an acousto-optic filter. The use of acousto-optic tunable filter is known in the art for passing selective light or wavelengths. Pettit discloses an acousto-optic tunable filter (34) permits desired wavelengths of light to pass while blocking out undesired wavelengths of light, (column 8, lines 13-18). It would have been obvious for

one of ordinary skill in the art to modify Kochy et al in view of Pettit to include the acousto-optic tunable filter in order to allow the passing of desired tagged pulses of fluorescence wavelengths which are detected and converted into electrical signals wherein the pulse outputs result in clear and precise images displayed on a monitor for further analysis.

As to claim 10, Kochy et al disclose (fig. 1) the characteristic fluorescence (21) is detected (17, 23, 24) by repetitively passing the emitted light (16) at each characteristic wavelengths through a filter during the transit of each particle (12) through the illumination source (14) and (17, 23, 24) detecting the passed emitted light (20, 21), (paragraphs [0023], [0024]). Kochy et al fail to explicitly disclose tunable filter. The use of acousto-optic tunable filter is known in the art for passing selective light or wavelengths. Pettit discloses an acousto-optic tunable filter (34) permits desired wavelengths of light to pass while blocking out undesired wavelengths of light, (column 8, lines 13-18). It would have been obvious for one of ordinary skill in the art to modify Kochy et al in view of Pettit to include the acousto-optic tunable filter in order to allow the passing of desired tagged pulses of fluorescence wavelengths which are detected and converted into electrical signals wherein the pulse outputs result in clear and precise images displayed on a monitor for further analysis.

As to claims 14-18, Kochy et al disclose (paragraph [0023]) (filter, not shown) placed in front of the detectors (23, 24) to pass light at specific wavelengths which will permit detection of particles tagged with readily available materials which emit light at predetermined wavelengths which constitutes adapted to shift pass band between four

wavelengths repetitively or any number of times during the transit of each particle through the illuminated detection volume, (paragraphs [0022], [0023]).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kochy et al (US2003/0017076) in view of Dovichi et al (5,567,294) and further in view of Pettit (6,210,973).

As to claim 2, Kochy et al disclose filters may be placed in front of detectors (23, 24) to pass light at specific wavelengths such as 580nm and 675nm which will permit detection of particles tagged with readily available materials which emit light at predetermined wavelengths, (paragraph [0023]). Kochy et al fail to explicitly disclose tunable filter is an acousto-optic filter. Dovichi et al disclose filter (139) can be a tunable filter, (column 5, lines 45-46). It would have been obvious for one of ordinary skill in the art to modify Kochy et al in view of Dovichi et al to include a tunable filter in order to pass selective wavelengths corresponding to each particle resulting in clear and precise detected images. Kochy et al in view of Dovichi et al fail to explicitly disclose an acousto-optic filter. The use of acousto-optic filter is known in the art for passing selective light or wavelengths. Pettit discloses an acousto-optic tunable filter (34) acts as a controllable optical wavelength filter such that a desired wavelength of light can be passed through the filter while all other wavelengths are blocked, (fig. 1, column 8, lines 14-17). It would have been obvious for one of ordinary skill in the art to modify Kochy et al in view of Dovichi et al and further in view of Pettit to include the acousto-optic tunable filter in order to allow the passing of desired tagged pulses of fluorescence

wavelength which are detected and converted into electrical signals wherein the pulse outputs result in clear and precise images displayed on a monitor for further analysis.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Don Williams whose telephone number is 571-272-8538. The examiner can normally be reached on 8:30a.m. to 5:30a.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QUE TAN LE
PRIMARY EXAMINER